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(Reaffirmed 2006)

भारतीय मानक
ताँबा मास्टर मिश्रधातुएं
(पहला पुनरीक्षण)
Indian Standard
COPPER MASTER ALLOYS
(*First Revision*)

UDC 621.745.4 : 669.35



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BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Copper and Copper Alloys Sectional Committee had been approved by the Metallurgical Engineering Division Council.

Copper master alloys are used to introduce required alloying elements in the manufacture of different copper alloys.

This standard was first published in 1970. In the present revision following main modifications have been made:

- a) Fiftyone percent copper nickel master alloy has been deleted as the same is no more being used for adding nickel in copper alloys
- b) Requirements of chemical composition, sampling and marking have been modified
- c) A new clause giving latest references has been incorporated.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COPPER MASTER ALLOYS

(First Revision)

1 SCOPE

This standard specifies chemical composition and other requirements for 14 copper master alloys.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard.

<i>IS No.</i>	<i>Title</i>
1387 : 1967	General requirements for the supply of metallurgical materials (first revision)
1817 : 1961	Methods of sampling non-ferrous metals for chemical analysis

3 SUPPLY OF MATERIAL

The general requirements relating to the supply of material shall be as laid down in IS 1387 : 1967.

4 SIZE AND SHAPE

The master alloys may be supplied in the form of notched bar or as specified by the purchaser.

5 FREEDOM FROM DEFECTS

5.1 The master alloys shall be reasonably uniform in quality and free from dross, flux and other harmful contamination.

5.2 The master alloys shall be homogenous with respect to chemical composition (Lotwise).

6 CHEMICAL COMPOSITION

6.1 The master alloys shall conform to the requirements of chemical composition as prescribed in Table 1.

6.2 The specification limits do not preclude the possible presence of other unnamed elements. By agreement between the manufacturer or the supplier and the purchaser, analysis may be required and limits established for elements not specified.

6.3 The chemical analysis shall be carried out in accordance with the methods as agreed to between the purchaser and the manufacturer.

7 SAMPLING AND CRITERIA FOR CONFORMITY

7.1 For check analysis, one sample shall be taken for every 500 kg or part thereof of master alloy of the same lot.

7.2 A sample for chemical analysis shall be prepared in accordance with the procedures laid down in IS 1817 : 1961.

7.3 If the test results of chemical analysis as obtained for each of the constituents satisfy the corresponding requirements, the lot shall be considered as conforming to this standard.

7.4 Retest

If the sample drawn for chemical analysis fail to meet the requirements stipulated in this standard, two more samples shall be selected and tested. If both the test results satisfy the requirements of chemical analysis, the lot shall be accepted, otherwise not.

8 PACKING

The master alloys shall be packed in containers weighing not more than 50 kg and that shall provide reasonable protection from moisture or contamination in transit or storage.

9 MARKING

9.1 The alloy designation, name, initials or trademark of the manufacturer shall be cast or otherwise legibly marked on ingot or notched bars. In case of shot, the aforesaid details shall be legibly marked on the boxes or crates containing the shot.

9.2 The material may also be marked with the Standard Mark.

Table 1 Chemical Composition of Copper Master Alloys
(Clause 6.1)

Alloy Description	Alloy Designation	Percent										Copper Plus Principal Alloying Element, Min
		Phosphorus	Beryllium	Cadmium	Chromium	Iron	Manganese	Silicon	Aluminium	Arsenic	Tellurium	
10 percent Phosphor Copper	Cu P 10	9.0-11.0	—	—	—	0.25 Max	—	—	—	—	—	99.50
14 percent Phosphor Copper	Cu P 14	13.0-15.0	—	—	—	0.20 Max	—	—	—	—	—	99.50
4 percent Beryllium Copper	Cu Be 4	—	3.0-5.0	—	—	—	—	—	—	—	—	99.50
60 percent Cadmium Copper	Cu Cd 60	—	—	59.0-61.0	—	—	—	—	—	—	—	99.50
10 percent Chromium Copper	Cu Cr 10	—	—	—	9.0-11.0	0.05 Max	—	—	—	—	—	99.50
15 percent Ferro Copper	Cu Fe 15	—	—	—	—	14.0-16.0	—	—	—	—	—	99.50
20 percent Ferro Copper	Cu Fe 20	—	—	—	—	19.0-21.0	—	—	—	—	—	99.50
30 percent Manganese Copper	Cu Mn 30	—	—	—	—	—	29.0-31.0	—	—	—	—	99.50
10 percent Silicon Copper	Cu Si 10	—	—	—	—	—	—	9.0-11.0	—	—	—	99.50
15 percent Silicon Copper	Cu Si 15	—	—	—	—	—	—	14.0-16.0	—	—	—	99.50
50 percent Aluminium Copper	Cu Al 50	—	—	—	—	—	—	—	49.0-51.0	—	—	99.50
60 percent Aluminium Copper	Cu Al 60	—	—	—	—	—	—	—	59.0-61.0	—	—	99.50
10 percent Arsenical Copper	Cu As 10	—	—	—	—	—	—	—	—	9.0-11.0	—	99.50
50 percent Copper Tellurium	Cu Te 50	—	—	—	—	—	—	—	—	—	48-52	99.50

NOTE — In case of alloys used for the manufacture of products used for electrical and other special purposes, the percentage of copper plus principal alloying elements shall not be less than 99.8.

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